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CASE STUDY

IDIOPATHIC COLONIC PERFORATION- A RARE CAUSE OF PERFORATION PERITONITIS IN ADULTS: CASE REPORT WITH LITERATURE REVIEW

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ABSTRACT

Idiopathic colonic perforation in adults is rare. We report a case of idiopathic sigmoid colon perforation in an adult male who presented to the emergency room with signs and symptoms of perforation peritonitis. On exploratory laparotomy, a single perforation was found on the antimesenteric border of the sigmoid colon, the biopsy of which revealed non specific acute inflammation. On evaluation, no etiological factor was found for the perforation.

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INTRODUCTION

Perforation peritonitis is a dreaded surgical emergency and is associated with high morbidity and mortality. A varied spectrum of etiologies for perforation is noted in India (Sharma *et al.,* 1991). Spontaneous colonic perforation is a rare cause of perforation peritonitis. Spontaneous perforation of colon is defined as sudden perforation of an apparently healthy colon in absence of diseases or injury (Zhang and Wu, 2002). Hence, perforations due to penetrating or blunt injuries, foreign bodies, instrumentations are excluded from this entity. The diagnosis of spontaneous colonic perforation is mainly on exclusion of the other organic causes of perforation. Based on the etiopathogenesis, spontaneous perforation of the colon is further classified into "idiopathic" and "stercoral" (Yang and Ni, 2008). In view of its rarity, the spontaneous colonic perforation is misdiagnosed and is associated with a high mortality rate. We report a case of spontaneous perforation of the sigmoid colon in which no etiological factor was found.

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CASE REPORT

A 65 year old man presented to the emergency room with generalized abdominal pain of 3 days duration. It was not associated with nausea or vomiting. He had not passed stools for the past 3 days. There was no history of habitual constipation, bleeding per rectum or mucoid stools. There was no history of anorexia or weight loss. He had no previous operations. On general examination, he was conscious and alert. He was afebrile, with tachycardia and a raised blood pressure of 150/100 mm of Hg. On per abdominal examination, there was distension with generalized tenderness and guarding. Digital per rectal examination revealed soft stools and no blood on the gloved finger. All the blood investigations were within normal range. An erect X ray of the abdomen revealed free air under diaphragm (Figure 1). The patient was taken up for an emergency exploratory laparotomy with a diagnosis of perforation peritonitis. On exploration, the peritoneal cavity contained around 300 ml of seropurulent fluid with a single perforation of size 5x5 mm on the antimesenteric border of the sigmoid colon (Figure 2). Stomach, duodenum, small bowel and the rest of the colon were normal. Edge biopsy of the perforation was taken and the perforation was primarily repaired. Drain was placed in the pelvis and the abdomen was closed.

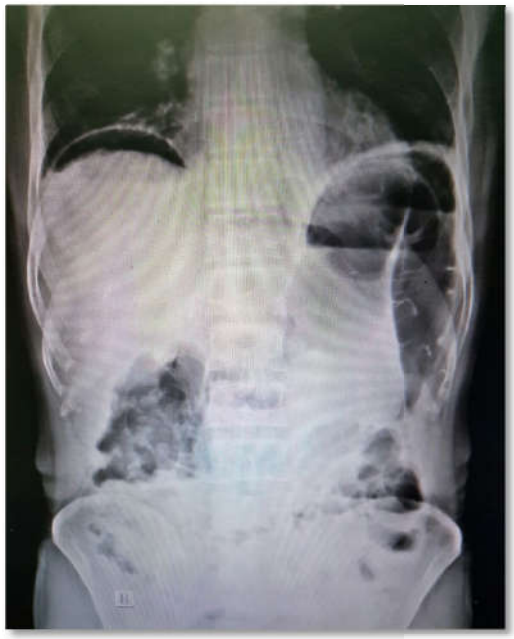

Figure 1. X ray abdomen showing free air under the diaphragm

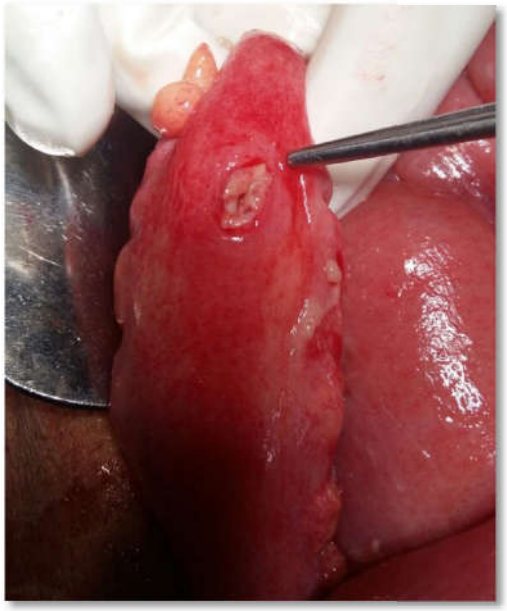

Figure 2. Intra operative photograph showing a single perforation of size 5x5 mm on the antimesenteric border of the sigmoid colon

The post operative period was uneventful and the patient was discharged on the 7th post operative day. The histopathological examination of the perforation site showed non-specific inflammation thus ruling out any organic cause for the perforation.

DISCUSSION

Spontaneous perforation of the colon is a rare entity. The pathophysiology is not well understood and many factors such as pressure necrosis, constipation, colonic dysfunction and ischemic lesions have been suggested as risk factors (Tokunaga *et al.,* 1998; Basile *et al.,* 1992). Spontaneous rupture of the normal colon was first described by Sir Benjamin Brodie in 1827 (Goligher *et al.,* 1984). Based on the etiopathogenesis, Berry (1984) classified spontaneous perforation of the colon into "stercoral" and "idiopathic" perforation (Gordon and Nivatvon, 2007). Anatomically, "stercoral perforation" originates from a pre-existing ulcerative lesion and is often situated in the sigmoid colon or rectum. Microscopically, they are characterized by superficial ischemic necrosis of mucosa with extension to sub-mucosa and muscular tissues of the colonic wall. Stercoral perforation is often a consequence of chronic constipation and the use of NSAIDs. The perforation occurs due to the hard impacted stools perforating the colon by ischemic necrosis (Gordon and Nivatvon, 2007). Maurer *et al* have proposed that a stercoral colonic perforation is usually round in shape with more than 1 cm in diameter. The colon is full of stool, which diffuses to the abdominal cavity through the perforation leading to feculent peritonitis. There ulcers may present with perforations at multiple sites (Maurer *et al.,* 2000). On the contrary, "idiopathic perforation", frequently occurs in the sigmoid colon or the recto- sigmoid junction without any underlying pathology of the colon. Majority of the idiopathic colonic perforations occur on the antimesenteric border and are commonly seen in males (Kasahara *et al.,* 1981). The anti-mesenteric border is the area of physiological ischemia (Galanis *et al.,* 2010). The perforation is often associated with a sudden increase in the intra- abdominal or intra- luminal pressure during defecation. The prognosis of idiopathic colonic perforation is better due to less degree of feculent contamination. Our case patient had idiopathic colonic perforation, as no etiology was found after a detailed history and investigation. Colonic perforation is a life threatening entity leading to septicemia and multiorgan failure. Early surgical intervention is the gold standard treatment. However, the type of surgery depends on the amount of contamination, the condition of the bowel and the physical condition of the patient. The mortality rate of this disease ranges from 35% to 45% (Serpell and Nicholls, 1990). The treatment options include primary closure with or without colostomy, exteriorization of the perforation site, resection anastomosis with or without covering colostomy or Hartmann's procedure. In our patient there was minimal seropurulent peritoneal contamination with a single clean perforation with healthy surrounding colon. Hence, the decision for primary closure was made.

Conclusion

Idiopathic colonic perforation, though rare, should be considered as one of the causes of perforation peritonitis. This condition is associated with high morbidity and mortality rate. Hence, timely surgical intervention is the key to improve prognosis in these patients.

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